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A word remains to be said about Mr. Baldwin's complaint that his pamphlet distinctly insisted on *the fact* of Organic Selection, without regard to any "particular way" it may be accomplished. Prof. Baldwin did file such a caveat upon all possible ways which man may ever invent for proving that Organic Selection *may be* a fact. But this is not the method of Science. She does not feel called upon *to invent* all possible ways before she rejects the sole one offered. When Prof. Baldwin does give us some other "particular way" than the one he did give for the operation of his factor, I will, perhaps, then be able to show him it cannot be called "new" with any sort of justice to Darwin and to biologists commonly.

Of the personal tone of Mr. Baldwin's "Note" I have nothing to remark, save by way of gratification, that it is unmatched in American Science.

HERBERT NICHOLS.

Boston, Oct. 14, 1896.

ANTHROPOLOGY.¹

Pictured Caves in Australia.—In West Australia, New South Wales, Queensland, and doubtless in other parts of Australia, where the geology is favorable, rock shelters and caves have been recently noticed, whose walls are decorated with native allegorical designs and figures of men, birds and animals outlined in colour. Mr. T. Wornsop addressing the Australasian Association for the Advancement of Science at Brisbane in January, 1895 refers to a great number of rock paintings of Kangaroos, Lizards, Emus, Flying birds, Snakes and other forms. Referring to discoveries of these strange and impressively decorated shelters by Sir George R. Grey, Mr. Stockdale, Mr. O. Donnell and others, he states that a general similarity characterizes the designs wherever found, and describes further the curious method of painting generally noted, which appears to consist in smearing the rock surfaces with animal fat, pressing the object to be represented against the greased rock, and then blowing dry color against it so as to thus stencil the outlined form by a surrounding area of contrasting tint. When wet color was splashed on, no grease would have been needed. Mr. W. J. Enright, the discoverer of numerous painted caves and Mr. R. H. Matthews describe in particular the abundant figures of human hands with

¹ This department is edited by H. C. Mercer, University of Pennsylvania.

out stretched fingers apparently painted and stenciled in this manner, often in red, in nearly all the caves. Along the Glen Lake river valley near Kimberly, West Australia and on Bulgar Creek, New South Wales the caves display hearts, white human figures on black backgrounds, staring faces outlined in red, with yellow lines, figures of the rising-sun, and Phallic symbols, where the stenciling according to Mr. Enright has often been done by blowing powered pipe clay from a deposit near at hand (sometimes white and sometimes stained yellow by oxides) upon the greased rock. Strangest sight of all must be the weird shelter on Nardo Creek in Central Queensland where a diabolical picture 70 feet long seems to represent a lake out of which are stretched hundreds of brown human arms pointing, grasping and knotted in many positions as if writhing in torture.

Mr. Wornsop and others looking in vain for a clue to the meaning of the rock paintings, have set in evidence the refusal of neighboring natives to account for them, just as earlier observers in America, were wont to quote indian ignorance of mounds, and earthworks. But on the other hand Mr. Enright noting the fresh appearance of many of the designs, speaks of one of the decorated caves recently inhabited by a native named Cutta Muttan, without doubting that the later had done the painting. No doubt he did, and small question that natives now living in Australia could if sympathetically approached by Ethnologists (who living with them had gained their confidence), explain all the designs. —H. C. MERCER.

Man and the Fossil Horse in Central France.—Not many hundred yards from the classic rock shelters of Laugerie Haute and Laugerie Basse (which contain according to the French classification *Magdalenian* and *Solutrean* culture layers) a recently exposed talus, along the Manaurie brook an affluent of the Vezere (department Dordogne Commune Tayac, France) has revealed an interesting and surprising deposit of human remains associated with bones of the fossil horse. M. M. Chauvet and Riviere digging a trench 17 meters long, 1.80 meters broad and 3 meters deep, found in one day, three hundred and more horse-teeth together with other horse bones generally broken by human hands, besides the remains of the badger (*Meles taxus*) and the canine tooth of a large carnivore. No fresh water or marine shells were found but with the bones about two hundred chipped flint axes ("Turtle-backs") of so-called Chellean type, or of similar ovate form worked only on one side, were unearthed in a few days, with three Mousterian *racloirs*, four discoidal flints, two Magdalenian flakes, two scrapers,

and some nuclei. But few details as to the stratification or formation of the deposit are given in the account published in *Cosmos* (Sept. 12, 1896, P. 211) and as nothing is said about hammer-stones, and flint chips, we are left to wonder whether the place represents a palæolithic workshop such as Messrs. Spurrel and W. G. Smith found at Crayford and Caddington, England or not. Meanwhile the excavation which we are told is to be continued, if studied with care and without bias may affect the validity of the French subdivisions (*Chellean Moustierian*, *Solutrean Magdalenian*) of the Palæolithic period in Central France. Judged by the shape of the flint blades found with the horse bones, M. M. Chauvet and Riviere call the deposit *Chello-Moustierian* while hardly a mile away, we have Laugiere Haute classified as showing *Magdalenian* above *Solutrean* culture layers, with Laugiere Basse, Cro-Magnon and Gorge d'Enfer floored with *Solutrean* only. The rock shelters of Le Moustier (*Moustierian*) and La Madeleine (*Magdalenian*) are not far distant and the question is whether all these different geological epochs supposed to indicate intervals of thousands of years, varying stages of human culture and changes in animal life can be justly established at this remarkable nucleus of ages where one more subdivision is proposed to be added to the list of culture layers represented in an area of a few square miles and based on differences in flint chipping, and variations not universally agreed to, in the sequence of animal life.

Chipped Flint blades from Somali Land.—Mr. H. W. Seton-Karr who presented to the British Association for the Advancement of Science at Ipswich, England in 1895 several heavy ovate blades of chipped flint from Somali Land, has brought more recently from the same region others (referred to in *Proceedings of Royal Society*, Vol. LX, no. 359, p. 19). Often well worked, considerably patenated, and resembling in shape and make, the drift blades of England and France they appear to have been found not in situ but on the surface, mostly along water courses where rain or wind had bared them of surrounding earth. No excavations were made to ascertain their position with reference to the surrounding geological strata, and no association appears to have been established with the remains of animals living or extinct. Nothing is said of Hammer-stones or chips that might have testified to the existence of blade workshops at the sites, and nothing as yet save the appearance of the blades (some of which are worked only on one side after the French *Moustier* pattern) has been presented to warrant us in setting back the date of these relics to the date of the similar shapes associated with the Mammoth and Rhinoceros in the Somme Valley.

Cave Hunting in Scotland.—If as we understand no chipped blades of the “Turtleback” or drift character have been gathered in Scotland or northern Europe, if no traces of (Paleolithic) man in Association with the Cave Bear, Woolly Rhinoceros and Mammoth have been discovered in caves or quarries anywhere to the northward of middle England or in Scandinavia North Germany and Russia, if in a word it can be proved that snow and ice precluded human presence or obliterated man’s foot-prints in northern Europe at the time when drift men were chipping flint on the banks of the Thames and Somme, then the exploration of caves in any part of this colder European region is of particular scientific interest. Near Oban in Scotland the Mackay, Gas works, Distillery, and MacArthur caves recently explored by Mr. J. Anderson for the Society of Antiquaries of Scotland (see proceedings of the Society, vol. XXIX, 1895, p. 211) showed human rubbish deposits consisting largely of the shells of edible mollusks (*Ostrea*, *Patella*, *Pecten*, *Solen*, etc.), interbedded in one instance (the Mackay Cave) with a gravel layer apparently caused by a marine inundation. In the latter cave, fairly representing the others, Mr. Anderson found in the shell rubbish about 150 bone needles and points, seven numerous barbed bone harpoons, sometimes with pierced bases, three pebble hammerstones, a few flint nodules, and several flakes and scrapers together with numerous fish bones and the remains of the common deer, the *Bos longifrons*, boar, the dog and the cat; in other words, the recent fauna of the region. The bones of fifteen human skeletons found apparently near the surface and above the shell and bone refuse in the various caves, according to Mr. Anderson and Sir William Turner, represent a people of the Neolithic or late stone age in Europe, while on the other hand M. Boule (see L. Anthropologie, May and June, 1896, p. 321) citing the gravel bed as evidence of an early flood and comparing the barbed and pierced harpoons with similar harpoons supposed to be of an intermediate age (between Paleolithic and Neolithic) from certain French caves, suggests that the Oban remains form a connecting link between the Paleolithic (Mammoth, Rhinoceros and Reindeer time) and the Neolithic (recent fauna time) of western Europe. When all the results of European archæology are summed up it has been supposed that a hiatus in time unbridged by any intermediate human or animal presence, existed between the earlier and later of these periods, and a link will be added to the archæological chain, if discoveries in French caves or elsewhere satisfactorily fill the supposed gap. But whether the remains from Oban can or cannot be assigned this important intermediate position, further investigation will show. For a time the cave explorer might leave

the southern fields where much collaboration has perplexed the subject, and turn northward. There the coast is clear. There evidence broadening the perspective of the European student, and setting a wide geographical limit to the ancient human record, can be established in unexplored caves, where in a new way the unearthed testimony should show the relation of fossil man to glacial ice and cold.—H. C. MERCER.

PROCEEDINGS OF SCIENTIFIC SOCIETIES.

New York Academy of Sciences.—Biological Section, October 12, 1896.—Dr. Bashford Dean and Mr. G. N. Calkins presented preliminary reports upon the results attained at the Columbia University Zoological Laboratory at Port Townsend, Washington. The expedition spent about six weeks in exploring and collecting, and brought home large collections from exceptionally favorable collecting grounds. Dr. Dean spent some time in Monterey, Cal., and brought home collections of eggs and embryos of *Chimæra* and *Bdellostoma*.

Dr. J. L. Wortman made a preliminary report upon the American Museum Expedition to the Puerco and Wasatch Beds. He reported finding a connecting link between the close of the Cretaceous and the beginning of the Tertiary. He gave an interesting account of the massive ruins of the so-called cliff-dwellers in the region visited by him. In the Big Horn basin the expedition had remarkable success as well as in the Wind River basin.

Prof. Osborn stated that with the collections made this summer the American Museum could now announce that their Eocene collection was complete, containing all mammals now known in the Eocene; that their collection from the Wasatch bed was the finest in existence, and that from the Wind River basin was complete; the Bridger was represented by all but two or three types; and fine collections have been made in the Uintah.

Mr. W. J. Hornaday made a report of a tour of inspection of foreign zoological gardens, made under the auspices of the New York Zoological Society. He visited fifteen gardens in England and on the continent, studying the features of excellence in each.

Prof. Bristol gave a brief account of the progress at the Marine Biological Laboratory at Wood's Hole, Mass., during the past summer.